

WHAT IS CLAIMED IS:

1. A vapor phase growth apparatus allowing vapor phase growth of a silicon single crystal film on the main surface of a silicon single crystal substrate to proceed therein,
 - 5 having a reaction vessel having a gas introducing port formed on a first end side in a horizontal direction, and having a gas discharging port on a second end side in the same direction, configured as allowing a source gas for forming the silicon single crystal film to be introduced through the gas
 - 10 introducing port into the reaction vessel, and to flow along the main surface of the silicon single crystal substrate held in a near-horizontally rotating manner in the inner space of the reaction vessel, and to be discharged through the gas discharging port, the silicon single crystal substrate being disposed on a disc-formed susceptor rotated in the inner space, and having a bank
 - 15 component disposed so as to surround the susceptor, and kept in a positional relation so as to align the top surface thereof at an almost same level with the top surface of the susceptor, and
 - 20 further configured so that the gas introducing port is opened so as to oppose to a outer peripheral surface of the bank component, so as to allow the source gas supplied through the gas introducing port to collide against the outer peripheral surface of the bank component and to climb up onto the top surface side thereof, and then to flow along the main surface of the silicon single crystal substrate on the susceptor,

wherein, assuming a virtual center line along the direction of flow of the source gas, extending from the first end of the reaction vessel towards the second end, while crossing normal to the axis of rotation of the susceptor, as the horizontal standard line, and also assuming the direction normal to both of the axis of rotation of the susceptor and the horizontal standard line as the width-wise direction,

a guide component dividing the flow of the source gas in the width-wise direction is disposed on the top surface of the bank component.

2. The vapor phase growth apparatus as claimed in Claim 1, wherein the guide component is configured so as to prevent the source gas from approaching the horizontal standard line.

3. The vapor phase growth apparatus as claimed in Claim 1 or 2, wherein the guide component is a guide plate dividing the flow of the source gas into sides closer to, and more distant from the horizontal standard line.

4. The vapor phase growth apparatus as claimed in Claim 3, wherein the guide plate is disposed so as to align the plate surface thereof in parallel with the axis of rotation of the susceptor and with the horizontal standard line.

5. The vapor phase growth apparatus as claimed in Claim 3 or 4, having a gas introducing component, introducing the source gas supplied

through the gas introducing port towards the outer peripheral surface of the bank component, disposed between the gas introducing port and the bank component as being symmetrically distributed with respect to the horizontal standard line in the width-wise direction, the gas introducing component

5 having, in each of gas introducing spaces formed inside thereof, a gas-introducing-component-side partition plate partitioning the flow of the source gas in the width-wise direction, and

having, on the outer peripheral surface of the bank component, a bank-component-side partition plate, partitioning the flow of the source gas
10 into a plurality of streams in the width-wise direction, disposed as being symmetrically distributed with respect to the horizontal standard line.

6. The vapor phase growth apparatus as claimed in Claim 5, wherein the guide plate is disposed outside the locations of the
15 bank-component-side partition plate and the gas-introducing-component-side partition plate disposed, in the width-wise direction.

7. The vapor phase growth apparatus as claimed in Claim 5, wherein the guide plate is configured as having a first guide plate disposed on
20 the same plane with the bank-component-side partition plate and the gas-introducing-component-side partition plate, and a second guide plate disposed outside the location of the first guide plate disposed in the width-wise direction.

8. The vapor phase growth apparatus as claimed in any one of Claims 1 to 7, further having an evacuation system keeping the inner space of the reaction vessel under a reduced pressure lower than the atmospheric pressure.

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9. A method of fabricating an epitaxial wafer disposing the silicon single crystal substrate in the reaction vessel of the vapor phase growth apparatus described in any one of Claims 1 to 8, allowing a source gas to flow in the reaction vessel so as to epitaxially grow a silicon single crystal film on the silicon single crystal substrate in a vapor phase, to thereby obtain an epitaxial wafer.

10. The method of fabricating an epitaxial wafer as claimed in Claim 9, wherein the silicon single crystal film is epitaxially grown on the silicon single crystal substrate in vapor phase, by using any one gas selected from the group consisting of monochlorosilane gas, dichlorosilane gas and trichlorosilane gas as the source gas, while keeping the inner space of the reaction vessel under a reduced pressure lower than the atmospheric pressure.

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